

IN THE CLAIMS

Please amend the claims as follows:

1 - 2. (canceled)

3. (previously presented) The method of claim 30, wherein the vulnerability includes a vulnerability to a computer virus.

4. (previously presented) The method of claim 30, wherein the vulnerability includes a vulnerability to computer hacking.

5. (previously presented) The method of claim 30 further comprising:
classifying the data processing systems storing replicas of the resource as vulnerable, wherein the classifying is responsive to the predetermined number of changed replicas of the resource being exceeded and the predetermined time duration being exceeded.

6. (previously presented) The method of claim 30 further comprising:
replacing the replica of the resource at each of the data processing systems storing a replica of the resource, wherein the replacing is responsive to the predetermined number of changed replicas of the resource being exceeded and the predetermined time duration being exceeded.

7. (previously presented) The method of claim 30 further comprising:
patching the replica of the resource at each of the data processing systems storing a replica of the resource, wherein the patching is responsive to the predetermined number of changed replicas of the resource being exceeded and the predetermined time duration being exceeded.

8. (previously presented) The method of claim 7, further comprising:

prior to patching the replica of the resource, comparing a set of hash values representing all pre-requisite programs of patch code with a stored set of hash values; and
in response to identification of matching hash codes for all pre-requisite programs, determining that said patching of the replica of the resource should proceed.

9. (previously presented) The method of claim 30 the steps further comprising:

sending a notification of the vulnerability to each data processing system storing a replica of the resource, wherein the sending is responsive to the predetermined number of changed replicas of the resource being exceeded and the predetermined time duration being exceeded.

10. (previously presented) The method of claim 9, further comprising:

selecting a sequence of vulnerability-resolution instructions relevant to the vulnerability and including the selected instructions within the notification sent to each data processing system.

11 - 29. (canceled)

30. (currently amended) A method ~~within a network having a vulnerability, the method~~ comprising the steps of:

computing first hash values derived from and representing a plurality of replicas of a resource, wherein the replicas of the resource are stored on respective data processing systems within a network;

storing the computed set of first hash values, wherein the storing includes:

~~storing identifications of the respective ones of said data processing systems~~

~~storing the replicas of the resource; and~~

~~storing time stamps for the hash values;~~

~~wherein the method further comprises:~~

computing at least second hash values for the replicas of the resource, wherein the computing of the at least second hash values is at a time after the computing of the first hash values;

~~computing current hash values for the replicas of the resource, wherein the computing of the current hash values is at a time after the computing of the at least second hash values;~~
~~comparing the hash values computed at successive times for each respective replica of the resource, in order to identify whether matching hash values exist;~~
~~comparing time stamps for matching hash values of each respective replica of the resource;~~
computing, responsive to comparing the time stamps and the hash values computed at successive times ~~comparison~~, a time duration during which the hash values of ~~each respective the~~ replicas of the resource remained unchanged; and
detecting for a current time, responsive to the hash value comparison indicating that at least one of the replicas of the resource have changed from one time to the current time, whether the changed replicas of the resource at the current time indicate a vulnerability, wherein the detecting comprises:
 detecting whether the computed time duration prior to the current time exceeds a predetermined time duration; ~~and~~
 ~~detecting whether changed replicas of the resource at the current time are more numerous than a predetermined number; and~~
 wherein the method further comprises:
 presenting a message for a user indicating ~~the changed replicas of the resource are due to~~ a vulnerability, wherein the presenting is responsive to the predetermined ~~number of changed replicas of the resource being exceeded and the predetermined time duration being exceeded.~~

31. (previously presented) An apparatus comprising:

a processor; and

a storage device connected to the processor, wherein the storage device has stored thereon a program, wherein the processor is operative to execute instructions of the program to implement a method comprising the steps of:

 computing first hash values derived from and representing a plurality of replicas of a resource, wherein the replicas of the resource are stored on respective data processing systems within a network;

storing the computed set of first hash values; ~~wherein the storing includes:~~

~~— storing identifications of the respective ones of said data processing systems~~

~~storing the replicas of the resource; and~~

~~— storing time stamps for the hash values;~~

~~wherein the method further comprises:~~

computing at least second hash values for the replicas of the resource, wherein the computing of the at least second hash values is at a time after the computing of the first hash values;

~~computing current hash values for the replicas of the resource, wherein the computing of the current hash values is at a time after the computing of the at least second hash values;~~

~~comparing the hash values computed at successive times for each respective replica of the resource, in order to identify whether matching hash values exist;~~

~~comparing time stamps for matching hash values of each respective replica of the resource;~~

computing, responsive to comparing the time stamps and the hash values computed at successive times ~~comparison~~, a time duration during which the hash values of each respective replica of the resource remained unchanged;

detecting for a current time, responsive to the hash value comparison indicating that at least one of the replicas of the resource has ~~have~~ changed from one time to the current time, whether the at least one changed replicas of the resource at the current time indicates a vulnerability, wherein the detecting comprises:

detecting whether the computed time duration prior to the current time exceeds a predetermined time duration; ~~and~~

~~— detecting whether changed replicas of the resource at the current time are more numerous than a predetermined number; and~~

wherein the method further comprises:

presenting a message for a user indicating ~~the changed replicas of the resource are due to~~ a vulnerability, wherein the presenting is responsive to the predetermined number of changed replicas of the resource being exceeded ~~and the predetermined time duration being exceeded.~~

32. (previously presented) The apparatus of claim 31, wherein the vulnerability includes a vulnerability to a computer virus.

33. (previously presented) The apparatus of claim 31, wherein the vulnerability includes a vulnerability to computer hacking.

34. (previously presented) The apparatus of claim 31, the steps further comprising:
classifying the data processing systems storing replicas of the resource as vulnerable, wherein the classifying is responsive to the predetermined number of changed replicas of the resource being exceeded and the predetermined time duration being exceeded.

35. (previously presented) The apparatus of claim 31, the steps further comprising:
replacing the replica of the resource at each of the data processing systems storing a replica of the resource, wherein the replacing is responsive to the predetermined number of changed replicas of the resource being exceeded and the predetermined time duration being exceeded.

36. (previously presented) The apparatus of claim 31, the steps further comprising:
patching the replica of the resource at each of the data processing systems storing a replica of the resource, wherein the patching is responsive to the predetermined number of changed replicas of the resource being exceeded and the predetermined time duration being exceeded.

37. (previously presented) The apparatus of claim 36, the steps further comprising:
prior to patching the replica of the resource, comparing a set of hash values representing all pre-requisite programs of patch code with a stored set of hash values; and
in response to identification of matching hash codes for all pre-requisite programs, determining that said patching of the replica of the resource should proceed.

38. (previously presented) The apparatus of claim 31, the steps further comprising:

sending a notification of the vulnerability to each data processing system storing a replica of the resource, wherein the sending is responsive to the predetermined number of changed replicas of the resource being exceeded and the predetermined time duration being exceeded.

39. (previously presented) The apparatus of claim 38, the steps further comprising:
selecting a sequence of vulnerability-resolution instructions relevant to the vulnerability and including the selected instructions within the notification sent to each data processing system.

40. (currently amended) A computer program product, stored on a tangible, computer readable medium, said computer program product having instructions for execution by a computer system, wherein the instructions, when executed by the computer system, cause the computer system to implement a method comprising the steps of:

computing first hash values derived from and representing a plurality of replicas of a resource, wherein the replicas of the resource are stored on respective data processing systems within a network;

storing the computed set of first hash values and time stamps for the first hash values;
~~wherein the storing includes:~~

~~storing identifications of the respective ones of said data processing systems
storing the replicas of the resource; and
storing time stamps for the hash values;~~

~~wherein the method further comprises:~~

computing at least second hash values for the replicas of the resource, wherein the computing of the at least second hash values is at a time after the computing of the first hash values;

~~computing current hash values for the replicas of the resource, wherein the computing of the current hash values is at a time after the computing of the at least second hash values;~~

~~comparing the hash values computed at successive times for each respective replica of the resource, in order to identify whether matching hash values exist;~~

~~comparing time stamps for matching hash values of each respective replica of the resource;~~

computing, responsive to comparing the time stamps and the hash values computed at successive times ~~comparison~~, a time duration during which the hash values of ~~each respective the~~ replicas of the resource remained unchanged; and

detecting for a current time, responsive to the hash value comparison indicating that at least one of the replicas of the resource has ~~have~~ changed from one time to the current time, whether the at least one changed replicas of the resource at the current time indicates a vulnerability, wherein the detecting comprises:

detecting whether the computed time duration prior to the current time exceeds a predetermined time duration; ~~and~~

~~—detecting whether changed replicas of the resource at the current time are more numerous than a predetermined number; and~~

wherein the method further comprises:

presenting a message for a user ~~indicating the changed replicas of the resource are due to~~ a vulnerability, wherein the presenting is responsive to the predetermined ~~number of changed replicas of the resource being exceeded and the predetermined time duration being exceeded.~~

41. (previously presented) The computer program product of claim 40, wherein the vulnerability includes a vulnerability to a computer virus.

42. (previously presented) The computer program product of claim 40, wherein the vulnerability includes a vulnerability to computer hacking.

43. (previously presented) The computer program product of claim 40, the steps further comprising:

classifying the data processing systems storing replicas of the resource as vulnerable, wherein the classifying is responsive to the predetermined number of changed replicas of the resource being exceeded and the predetermined time duration being exceeded.

44. (previously presented) The computer program product of claim 40, the steps further comprising:

replacing the replica of the resource at each of the data processing systems storing a replica of the resource, wherein the replacing is responsive to the predetermined number of changed replicas of the resource being exceeded and the predetermined time duration being exceeded.

45. (previously presented) The computer program product of claim 40, the steps further comprising:

patching the replica of the resource at each of the data processing systems storing a replica of the resource, wherein the patching is responsive to the predetermined number of changed replicas of the resource being exceeded and the predetermined time duration being exceeded.

46. (previously presented) The computer program product of claim 45, the steps further comprising:

prior to patching the replica of the resource, comparing a set of hash values representing all pre-requisite programs of patch code with a stored set of hash values; and

in response to identification of matching hash codes for all pre-requisite programs, determining that said patching of the replica of the resource should proceed.

47. (previously presented) The computer program product of claim 40, the steps further comprising:

sending a notification of the vulnerability to each data processing system storing a replica of the resource, wherein the sending is responsive to the predetermined number of changed replicas of the resource being exceeded and the predetermined time duration being exceeded.

48. (previously presented) The computer program product of claim 47, the steps further comprising:

selecting a sequence of vulnerability-resolution instructions relevant to the vulnerability and including the selected instructions within the notification sent to each data processing system.